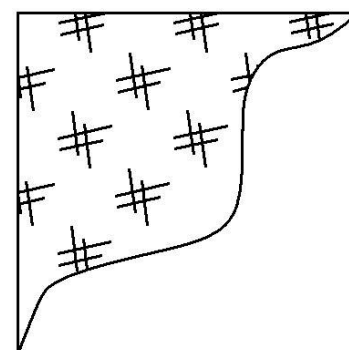


EC-9 STRAW MULCH

Refer to: ITD Standards and Specifications for Highway Construction, Sections 212, 621, and 711.



Standard Symbol

Definition and Purpose

Straw mulch consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or anchoring it with a tackifier stabilizing emulsion.

Appropriate Applications

- Straw mulch is typically used for soil stabilization as a temporary surface cover on disturbed areas until soils can be prepared for revegetation and permanent vegetation is established.
- Also typically used in combination with temporary and/or permanent seeding strategies to enhance plant establishment.

Limitations

- Availability of erosion control contractors and straw may be limited prior to the rainy season due to high demand.
- There is a potential for introduction of weed-seed and unwanted plant material.
- When straw blowers are used to apply straw mulch, the treatment areas must be within 150 feet of a road or surface capable of supporting trucks.
- Straw mulch applied by hand is more time-intensive and potentially costly.
- May have to be removed prior to permanent seeding or soil stabilization.
- Application of straw mulch should be performed in calm conditions with wind speeds below 8 mph.

BMP Objectives

- | | |
|-------------------------------------|-----------------------|
| <input type="checkbox"/> | Perimeter Control |
| <input checked="" type="checkbox"/> | Slope Protection |
| <input checked="" type="checkbox"/> | Borrow and Stockpiles |
| <input checked="" type="checkbox"/> | Drainage Areas |
| <input type="checkbox"/> | Sediment Trapping |
| <input type="checkbox"/> | Stream Protection |
| <input checked="" type="checkbox"/> | Temporary Stabilizing |
| <input checked="" type="checkbox"/> | Permanent Stabilizing |

- When working in sandy soils, pushing the straw into the soils with shovels, discs, or other equipment has limited effectiveness. Other methods, such as the use of tackifiers, should be considered to secure the mulch in place.

Design Parameters

- Straw shall be derived from wheat, rice, or barley.
- A tackifier is the preferred method for anchoring straw mulch to the soil on slopes.
- Crimping, punch roller-type rollers, or track walking may also be used to incorporate straw mulch into the soil on slopes. Track walking shall only be used where other methods are impractical.
- Placing straw onto the traveled way, sidewalks, lined drainage channels, sound walls, and existing vegetation shall be avoided.
- Straw mulch with tackifier shall not be applied during or immediately before rainfall.

Application Procedures

- Generally, loose straw shall be applied at a minimum rate of 4,000 pounds/acre, or as indicated in the project's special provisions, manufacturer's recommendation, either by machine or by hand distribution. If stabilizing emulsion will be used to anchor the straw mulch in lieu of incorporation, embankment or fill areas shall be roughened by rolling with a crimping or punching type roller or by track walking, before placing the straw mulch. Track walking should only be used where rolling is impractical and shall be considered when applying duff.
- The straw mulch must be evenly distributed on the soil surface.
- The mulch shall be anchored in place by using a tackifier or by "punching" it into the soil mechanically (incorporating).
- A tackifier acts to glue the straw fibers together and to the soil surface. The tackifier shall be selected based on longevity and ability to hold the fibers in place.
- A tackifier is typically applied at a rate of 125 pounds/acre. In windy conditions, the rates are typically 180 pounds/acre.
- Methods for holding the straw mulch in place depend upon the slope steepness, accessibility, soil conditions, and longevity. If the selected method is incorporation of straw mulch into the soil, then do as follows:
 - On small areas, a spade or shovel can be used.
 - On slopes with soils that are stable enough and of sufficient gradient to safely support construction equipment without contributing to compaction and instability problems, straw can be punched into the ground using a knife-blade roller or a straight bladed coulter, known commercially as a "crimper."
 - On small areas and/or steep slopes, straw can also be held in place using plastic netting or jute. The netting shall be held in place using 11 gauge wire staples,

geotextile pins or wooden stakes (as described in EC-11 (Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats)).

Maintenance and Inspection

- Inspections shall be conducted as required by the NPDES permit or contract specifications.
- The key consideration in Maintenance and Inspection is that the straw needs to last long enough to achieve erosion control objectives.
- An unbroken, temporary mulched ground cover shall be maintained while disturbed soil areas are non-active. Any damaged ground cover shall be repaired, and exposed areas re-mulched.
- Reapplication of straw mulch and tackifier may be required to maintain effective soil stabilization over disturbed areas and slopes.
- After any rainfall event, the Contractor is responsible for maintaining all slopes to prevent erosion.